WHAT IS CLAIMED IS:

1. A method of determining a start of a transmitted frame at a receiver on a frame-based communications network, the method comprising:

providing a preamble format for the transmitted frame wherein a plurality of identical copies of a preamble symbol sequence are transmitted sequentially;

filtering a received transmitted frame using filter coefficients matched to the preamble symbol sequence to provide a correlation sequence;

computing a squared-magnitude of the correlation sequence;

low-pass filtering the squared-magnitude of the correlation sequence to provide a low-pass filtered correlation signallow-pass filtered signal;

delaying the low-pass filtered correlation signal to provide a delayed low-pass filtered correlation signal;

multiplying the delayed low-pass filtered correlation signal by a first fixed predetermined threshold to provide a multiplied correlation signal;

comparing the multiplied correlation signal with the low-pass filtered correlation signal to provide a correlation difference indicator;

detecting energy of the received transmitted frame and low-pass filtering the energy to provide a low-pass filtered energy signal comparing detected energy to a fixed energy threshold to provide a threshold compared energy signal;

multiplying the low-pass filtered energy signal by a second fixed predetermined threshold to provide a multiplied energy signal;

comparing the threshold compared low-pass filtered correlation signal with the threshold compared mulitiplied energy signal to provide a correlation peak indicator; and

forming a logical-AND of the correlation difference indicator and the correlation peak indicator to determine a match/no match comparison indicative of the start of a transmitted frame.

2. The method of Claim 1, wherein the filtering includes low-pass filtering the received transmitted frame using filter coefficients matched to the preamble symbol sequence to provide a filtered received signal and averaging a squared-magnitude of the filtered received signal.

3. The method of Claim 1, wherein the filtering is linear matched filtering.

4. The method of Claim 3, wherein the filter coefficients are a time-reversed complex-conjugated repeated preamble symbol sequence.

5. The method of Claim 4, wherein the time-reversed complex-conjugated repeated preamble repeated preamble symbol sequence is a constant-amplitude zero-autocorrelation sequence.

6. The method of Claim 4, wherein the time-reversed complex-conjugated repeated preamble symbol sequence includes complex symbols drawn from a Quadrature Phase Shift Keying or 4-Quadrature Amplitude Modulation constellation.

7. The method of Claim 4, wherein the time-reversed complex-conjugated repeated preamble symbol sequence includes 16 symbols repeated at least 3 times, every 4-symbol sub-sequence of which being constant amplitude, zero autocorrelation.

8. The method of Claim 1, wherein the steps of multiplying

include first computing 10*log10(.), or an approximation of 10*log10(.), of each operand to provide a plurality of log operands and then adding each of the plurality of log operands.

9. A method of determining a a start of a transmitted frame at a receiver on a frame-based communications network, the method comprising:

providing a preamble format for the transmitted frame wherein a plurality of identical copies of a preamble symbol sequence are transmitted sequentially;

filtering a received transmitted frame using filter coefficients matched to the preamble symbol sequence to provide a correlation sequence by low-passlinear matched filtering the received transmitted frame using filter coefficients matched to the preamble symbol sequence to provide a filtered received signal and averaging a squared-magnitude of the filtered received signal, the filter coefficients being a time-reversed complex-conjugated repeated preamble symbol including time-reversed complex symbols drawn from a Quadrature Phase Shift Keying or 4-Quadrature Amplitude Modulation constellation and having 16 symbols repeated at least 3 times, every 4-symbol sub-sequence of which being constant amplitude, zero autocorrelation;

computing a squared-magnitude of the correlation sequence;

low-pass filtering the squared-magnitude of the correlation sequence to provide a low-pass filtered correlation signallow-pass filtered signal;

delaying the low-pass filtered correlation signal to provide a delayed low-pass filtered correlation signal;

multiplying the delayed low-pass filtered correlation signal by a first fixed predetermined threshold by first computing 10*log10(.), or an approximation of 10*log10(.), of each low-pass filtered correlation signal operand to provide a plurality of low-pass filtered correlation signal log operands and then adding

each of the plurality of low-pass filtered correlation signal log operands to provide a multiplied correlation signal;

comparing the multiplied correlation signal with the low-pass filtered correlation signal to provide a correlation difference indicator;

detecting energy of the received transmitted frame and low-pass filtering the energy to provide a low-pass filtered energy signal comparing detected energy to a fixed energy threshold to provide a threshold compared energy signal;

multiplying the low-pass filtered energy signal by a second fixed predetermined threshold by first computing 10*log10(.), or an approximation of 10*log10(.), of each low-pass filtered energy signal operand to provide a plurality of low-pass filtered energy signal log operands and then adding each of the plurality of low-pass filtered energy signal log operands to provide a multiplied energy signal;

comparing the threshold compared low-pass filtered correlation signal with the threshold compared mulitiplied energy signal to provide a correlation peak indicator; and

forming a logical-AND of the correlation difference indicator and the correlation peak indicator to determine a match/no match comparison indicative of the start of a transmitted frame.